



INTERNATIONAL PRELIMINARY EXAMINATION REPORT
(PCT Article 36 and Rule 70)

Applicant's or agent's file reference P100773WO	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416)	
International application No. PCT/GB 03/04103	International filing date (day/month/year) 26.09.2003	Priority date (day/month/year) 26.09.2002
International Patent Classification (IPC) or both national classification and IPC B08B7/00		
Applicant BNFL (IP) LIMITED et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 5 sheets, including this cover sheet.
- ☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).
- These annexes consist of a total of 24 sheets.

3. This report contains indications relating to the following items:
- I ☒ Basis of the opinion
 - II ☐ Priority
 - III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
 - IV ☐ Lack of unity of invention
 - V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
 - VI ☐ Certain documents cited
 - VII ☐ Certain defects in the international application
 - VIII ☐ Certain observations on the international application

Date of submission of the demand 23.04.2004	Date of completion of this report 16.03.2005
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer Jandl, F Telephone No. +49 89 2399-7599 

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/GB 03/04103

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, Pages

1-22 received on 20.01.2005 with letter of 14.01.2005

Claims, Numbers

1-10 received on 20.01.2005 with letter of 14.01.2005

Drawings, Sheets

1/4-4/4 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. **PCT/GB 03/04103**

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-10
	No: Claims	
Inventive step (IS)	Yes: Claims	1-10
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-10
	No: Claims	

2. Citations and explanations

see separate sheet

Re Item V

**Reasoned statement with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement**

1. Citations

Reference is made to the following documents:

D1 = FR 2 760 403 A
D2 = EP 0 653 762 A
D3 = WO 97/48536 A
D4 = EP 0 642 846 A
D5 = EP 0 724 929 A

2. Opinion on novelty and inventive step - Article 33 PCT

The present application satisfies the criterion set forth in Article 33(2) and (3) PCT because the subject-matter of claims 1-10 is new and involves an inventive step.

State of the art

is a method of treating an inorganic non-metallic surface for removal of a surface portion by scabbling, whereby a spot of laser light being moved over the surface. Such a method is disclosed e.g. in D1 on page 2, line 28 - page 3, line 19 and figure 1-4.

The contribution beyond the state of the art

consists in that a first discrete location on the surface is irradiated with a stationary spot of laser light having an average power density 30 - 200W/cm² for a period between 1-30s, then moving the spot of laser light relative to the surface so as to irradiate a second discrete location of the surface in the same manner.

Advantage

The discontinuous irradiation of laser light assures that the scabbling of the surface does not fail on a first scan of the laser over the surface. This improves efficiency and time economy of the surface treating method.

Such steps are not disclosed in D1, where a cylinder is rotated at a constant speed.

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/GB 03/04103

The laser light when applied in pulses of 10Hz, results in an irradiation period of 0,1s and has power density of $5\text{W}/\text{cm}^2$, which is far from the inventive range.

Equally, in the method of D2, which is applicants earlier specification in this technical field only a continuous traverse laser speed is disclosed (see e.g. claim 6, 10 or 17). No suggestion or hint is given to hold the movement of the laser in order to create a stationary spot of laser light.

In D3 a method of surface treating is disclosed whereby a laser is moved over the surface to be treated. The laser can be in constant power or pulsed power mode. No detail is given on the speed of the laser movement.

D4 and D5 relate only to pulsed power laser irradiation giving rise to ablative and not to scabbling treatment of the surface, whereby the period of irradiation is in the range of nanoseconds. The method of D5 aims to treat metallic surfaces only.

No hint nor a suggestion concerning a holding or stopping of laser movement can be found in anyone of documents D1-D5. Any combination of these documents with one another would therefore lead away from the claimed subject-matter of claim 1.
Claim 1 is therefore new and inventive.

Claims 2-10 are all directly or indirectly dependent on claim 1 and therefore also new and inventive.

Claim 1 is based on originally filed claim including now the features of original claim 12 and 13 as well as clarification features from original description on page 1 and 4.

Claim 2-5 are based on features from the description on page 11-13.

Claim 6 is based on original claim 2.

Claim 7 is based on original claim 3.

Claim 8 is based on original claims 4-6.

Claim 9 is based on original claim 8.

Claim 10 is based on original claim 9.